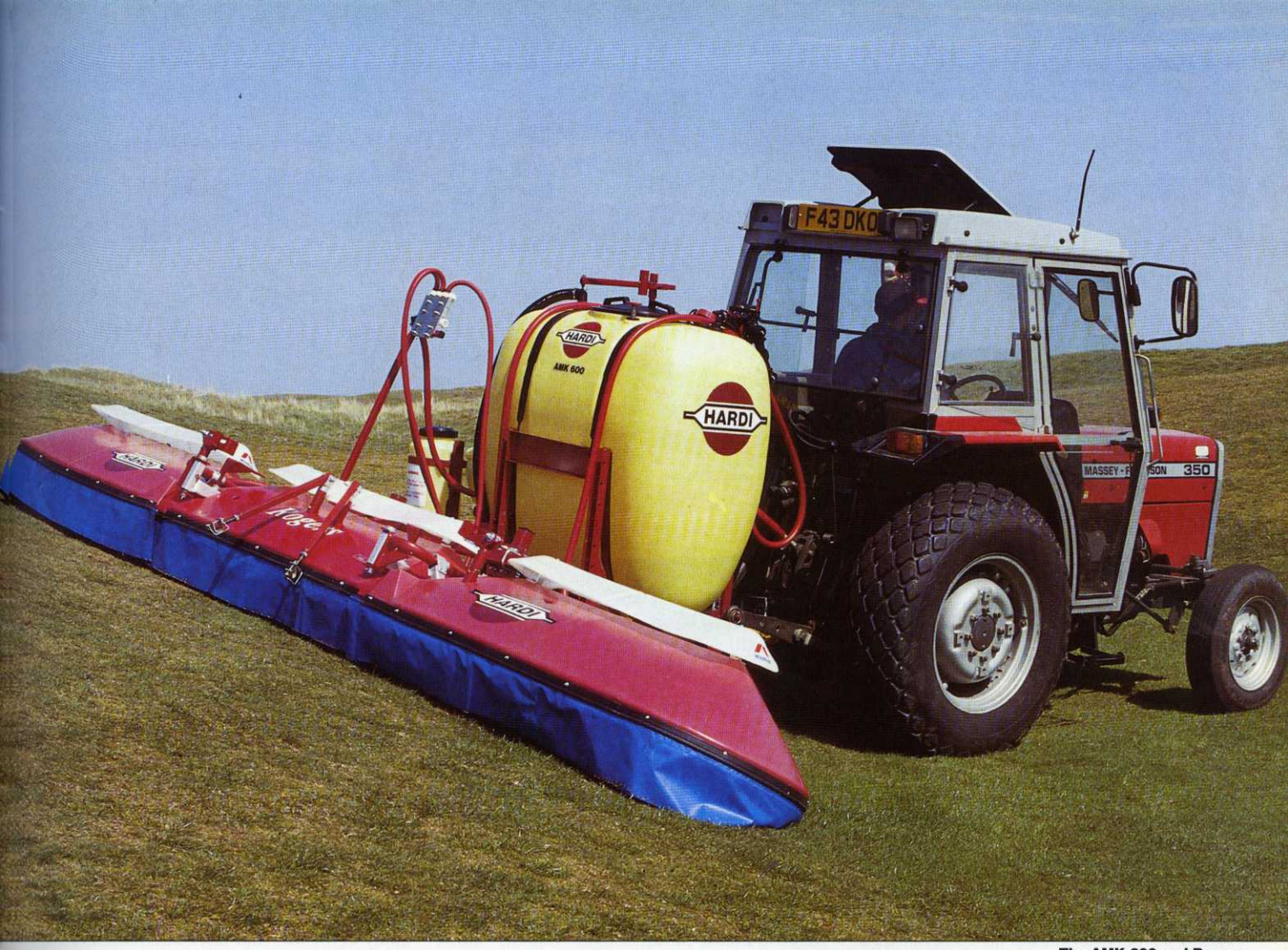

The AMK 600 and Rogers

Let us spray

by **HUGH TILLEY**

Spraying tends to be a non-preferred task – probably made so by hype about environmental and safety concerns and the need for operator training. This is not to say that these concerns are not real simply that they worry the greenkeeper and as a result he tends to use a sprayer as little as possible. And because a sprayer is used infrequently it has a low priority for replacement upgrading or maintenance which exacerbates the position. Nor are most clubs prepared to justify or pay for high specification machines.

While agriculture has a number of specialist sprayer manufacturers the position in the amenity field is totally different with just one main player and several other smaller ones although there are signs that several companies are looking more seriously at the golf market. Nevertheless current suppliers provide sprayers to suit most needs especially as sprayers are largely modular in design so that it is relatively easy to add sophistication or upgrades. It is also possible that an old machine can be upgraded with new components although it needs a specialist to undertake this and often the cost makes it uneconomic.

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Spraying tends to separate into two types of area, relatively small areas such as greens and tees and the more extensive areas such as fairways, rough or semi-rough. There is also often a need to apply spot or localised treatments. For the latter a small pedestrian operated or even knapsack sprayer may be ideal, however, larger machines have the option to fit a hose and hand lance which can be used for spot treatment perhaps more conveniently – except that it requires putting a larger volume in the tank. Most greenkeepers seem to prefer a turf maintenance vehicle mounted sprayer for greens surrounds and tees although many use a small mounted machines behind a compact tractor. Such machines will work well enough on fairways although the task may be spread over several days thus a significant number of clubs now employ a contractor with larger equipment who will complete the task in a few hours. Using a contractor also has the advantage that you do not have key staff tied up at what is inevitably a critical time, especially as it is normally senior staff who are trained.

A growing number of Course Managers and Head Greenkeepers realise the importance of

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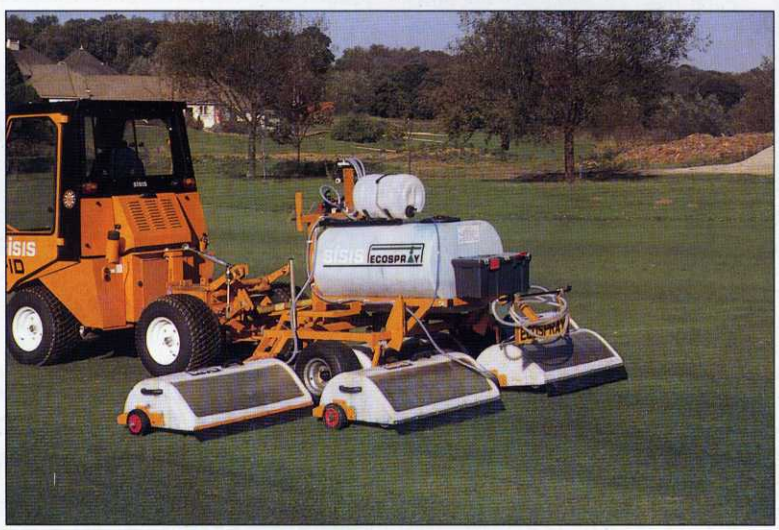
accuracy and now use some form of bout marking. Adding a colourant to the spray is one method of seeing where you have sprayed, however reports of the success of this method vary. More generally acceptable is the use of a foam bout marker which leaves a line of foam blobs from the boom end – this may produce strange (even 'worried') comments from players – but they can be assured that the foam is less harmful than washing up liquid.

There are several important criteria to be met before spraying, weather is prime – minimal wind and no rain! and for many herbicides! warm growing conditions, this limits the time available for spraying very considerably.

Wind – and the resultant spray drift – is a problem which has been addressed by two manufacturers. Hardi import the Rogers Airfoil from Canada while Sisis have, with significant technical input from Cranfield University and others, designed their own. Both designs are shrouds which cover the boom/s so that the spray is enclosed and thus isolated or semi isolated from any wind. This has been portrayed as simple and very effective against high velocities of wind! However, it is not quite as simple as this and the booms are not cheap which may mean that multi course clubs and contractors are likely to be the first customers. As anyone who has waited for suitable conditions knows, the number of days available for spraying with a conventional boom is severely limited.



Most sprayers are remarkably tolerant to variations in forward speed – so long as there is a constant relationship between engine and forward speed, ie you always use the same gear – hydrostatic transmission prevents this. However, there are electronic controls which can be fitted which will relate forward speed to required output and match them for even, accurate coverage. Although such devices are not cheap, they are not expensive when related to the savings in time and effort offered. For hilly courses where it is almost impossible to maintain a constant speed they may be vital.

Weed Free of Bracknell – contractor

Founded in 1991 by Mike Seaton, and now employed by a large number of golf clubs, as well as other turf, amenity and industrial businesses, across the country, Weed Free has recently invested in a self propelled spraying unit to which Mike has fitted Hardi Windfoil booms This has considerably extended his window of usage, and it also means greater certainty of being able to spray on the day specified. He can now spray almost irrespective of wind, although he still needs dry non-freezing weather, although he admitted that in higher wind conditions the foam blobs marks could get blown away.

The 5.5m windfoil booms are fitted to a purpose made 'Spray Ranger' vehicle – purpose made for agricultural spraying but modified to Mike's specific requirement. In particular this meant lowering the outline with lower cab and tank, making it look less daunting for amenity use. Following his exhibiting at Saltex many groundsmen and greenkeepers offered names for this combination – and he chose "Spraying Mantis".

Several clubs anticipate using the Weed Free service this year – in particular course manager Adam Carter of Clubhouse plc with Duke's Dene and Nigels Golf Club courses, has been impressed by the concept and equipment although in the past he has been able to undertake most of his spraying using TMV mounted Hardi 300 sprayers. He commented that the ability to apply chemical to larger areas such as fairways and roughs within a single day has great appeal, furthermore Adam believes that being able to apply in wind or even in light rain, and at night is a breakthrough and an invaluable commitment to the golf scene. Although he had not checked it out, it was Adam's belief that the Spraying Mantis with its wide low pressure tyres was no heavier in terms of p.s.i. on the ground than a TMV sprayer.

But perhaps the most important aspect is that the unit allows Weed Free to agree a schedule with the Head Greenkeeper and be reasonably sure that they can keep to it.

Spraying Mantis at London Golf Club

Weed Free used the machine last spring to apply herbicides and insecticides on a considerable area of fairway, semi-rough and jungle rough at London Golf Club. Steve Jones – Superintendent at the 36 hole facility, estimated wind speeds as being over 10mph and this caused no sign of spray drift, and he was quite happy that it would work in considerably higher wind speeds. The club has its own 'walk' Wind Foil booms with a self-propelled Spray King for greens, tees and similar smaller areas thus the principle was not new to them. Powered by a 1800cc Ford diesel engine the machine had no problems in coping with the undulations on the course, the LH Agro computer ensuring a constant spray output.

As the machine was effectively a prototype there were some teething problem such as the boom skids marking the turf, and spraying commenced before the machine started forward, however, he is happy that these problems have been easily solved. He commented that the machine was extremely manoeuvrable, and that the ability to change rates and forward speed was very easy. Such abilities made it simple to match application to the conditions prevailing, and he believed that the machine was spraying at speeds of 7mph where ground conditions permitted this. Some spraying has been carried out at night using the ample working lights fitted to the sprayer. The electronic controls coped well with undulations and other speed

restricting factors. There was no criticism of the results and no sign of damage to trees or other surrounding vegetation .

Sisis Ecospray – pre-production

First seen at Saltex and then around the country at the Sisis Direct road show, the Ecospray is likely to be available this year in a variety of forms, all of which will be based on the five gang mesh shrouded boom from Spring 98. Each section encloses three 'bubble' nozzles and floats over the ground on small wheels. Overall spraying width is 4.03m. Outside units are lifted and folded in – and locked for transport.

Ecospray units are to to be produced in trailed and mounted form, both with a PTO driven diaphragm pump, but are also expected to be available as 'boom only' to fit to existing sprayers and spraying systems, and suitable to fit behind turf maintenance vehicles such as Cushman, Workman or Huxtruk.

The original idea was conceived by Complete Weed Control of Stafford and Roger Turner who actually holds the patent. Roger's view was that today's amenity spraying did not allow for any drift, and he added that previous sprayers were based on agricultural design – where a limited amount of drift was not too serious. He took his ideas to Dr Steve Parkin at Cranfield University who, via computer modelling and a wind tunnel, proved the parameters for the design.

The prototypes produced as trailed machines with 320 litre tanks are due for several modifications in the light of greenkeeper and groundsmen's comments. Typical modifications are to the filling arrangements which will make the top filler more accessible and new wider wheels on the booms.

Plumbing includes a simple sightglass/ball monitor to indicate if any nozzles become blocked as well as individual control valves. COSHH requirements are met with a clean water tank and dirty clothes locker. A hand lance is also standard to allow hand work around areas where the boom cannot reach, such as around trees and buildings

Demonstrated at Sandford Springs Golf Club in Hampshire on the Sisis road show in a high wind – using just water and a colorant before a large number of greenkeepers and groundsmen the machine attracted favourable comment. There was no sign of any spray drift, nor even of any significant amount of staining on the shrouds which would indicate vortex, turbulence or spray build-up inside.

Complete Weed Control are spraying contractors with considerable experience of applying in a wide range of conditions and locations. Roger said that in his experience the public have become very alarmed about all spraying. Using the Ecospray has allayed many of their fears, perhaps because they do not see it as a sprayer (and they don't see spray), and this view was borne out at Sandford Springs by one watching greenkeeper who commented, "you wouldn't have to put up the 'spraying boards' notice on the greens if you used one of those."

Hardi Windfoil at St George's Hill – Weybridge, Surrey

One of the first clubs in the country to use the Windfoil, St George's Hill is on extremely undulating heathland with 27 holes in a very sensitive environment surrounded by very exclusive residential property. In addition trees and woodland make for uncertain wind eddies and directions – thus the Windfoil boom was a 'natural'. It is fitted behind a Hardi 300 litre sprayer on a Cushman.

Andy Hall, Head Greenkeeper at St George's, said the boom which is in three sections and has 9 nozzles adapts to the contours very well. He considered it for its ability to extend the spraying window and he has used it with both herbicides and insecticides and found that it has given all the flexibility he was expecting. No drift has been experienced and the machine has been used in some very breezy conditions

Electric controls make for easy operation and the sprayer has been fitted with an inductor which takes the chemical direct from the container, rinsing it too, thus further reducing the hazard to the operator.

He used the term "flexibility" in several contexts, for not only has the boom given him flexibility in timing, but it has also given him greater control and accuracy in application. The three sections run on small coaster wheels and keep the nozzles at a predetermined height above the turf, in contrast to a conventional boom which can dig in or fly high on undulations, resulting in inaccurate application and greater drift .

Andy commented that because there is no drift, there is no smell nor pollution evident – and this is noticeable to the operator, golfers and anyone else in the area. It is his belief that such booms will become compulsory in future. The club is particularly concerned about health and safety and the environment. Andy admitted that spraying is a least favoured task on the course.

No problems in construction have been found, maintenance is rigidly adhered to with a thorough wash after use and a complete grease round the wheels, which, Andy has been informed, can seize up on their axles.

Both Andy and the club are happy about the investment, accepting that it is higher than for a basic sprayer, but Andy said, "we only got what we paid for – and I think we've got a 'Rolls Royce' in sprayers."